Novel metabolic labeling method for tracking stem cells to irradiated salivary glands using PET

Grant Award Details

Novel metabolic labeling method for tracking stem cells to irradiated salivary glands using PET

Grant Type: Inception - Discovery Stage Research Projects

Grant Number: DISC1-10513

Investigator:

Name:	Guillem Pratx
Institution:	Stanford University
Type:	PI

Award Value: $235,613

Status: Pre-Active

Grant Application Details

Application Title: Novel metabolic labeling method for tracking stem cells to irradiated salivary glands using PET

Public Abstract:

Research Objective

This project aims to develop a sensitive and non-invasive method for tracking stem cells in clinical trial, without the need for genetically engineered reporters or long-lived radioisotopes.

Impact

The ability to see follow stem cells over time, as they engraft, will make it possible to predict response to stem cell therapy and understand why treatments fail, when they do.

Major Proposed Activities

- Synthesis and in vitro evaluation of 18F-tetrazine as a PET probe for tracking metabolically labeled stem cells
- Cell tracking of metabolically labeled human salivary stem cells to monitor tissue regeneration in a mouse model of radiation-induced xerostomia

Statement of Benefit to California: Regenerative cell-based therapies have shown promising results for a variety of diseases, including radiation-therapy-induced xerostomia, yet practical methods for tracking transplanted cells are still lacking. This project will develop a new method for labeling sensitive stem cells without the need for genetic engineering or long-lived radionuclides. This new tool will benefit Californians by accelerating progress toward cures in ongoing CIRM-sponsored trials of stem cell therapies.

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